3. (Twice amended) The artificial antigen as claimed in claim 1, wherein said fragment of at least 5 consecutive amino acids of a filaggrin unit is fragment 71-119 of SEQ ID NO: 7 or sub-fragments thereof comprising at least one arginine residue.

4. (Amended) The artificial antigen as claimed in claim 1, wherein said fragment of at least 5 consecutive amino acids of a filaggrin unit is selected from peptides SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 6, or sub-fragments thereof comprising at least one arginine residue.

6. (Twice amended) An antigenic composition, which contains an antigen as claimed in any one of claims 1 to 4, with the exclusion of compositions with a structure identical to that of a preparation of isoforms of filaggrin which is purified from the human epidermis comprising a mixture of isoforms having a molecular weight of 40,000 measured by SDS-PAGE and a pI ranging between 5.8 and 7.4.

Please add the following new claims:

13. A process for preparing an artificial antigen which is specifically recognized by the antifilaggrin autoantibodies present in the serum of patients suffering from rheumatoid arthritis, wherein said process comprises:

providing a recombinant or synthetic polypeptide consisting of a filaggrin unit of SEQ ID NO: 7 or a fragment thereof of at least 5 consecutive amino acids comprising at least one arginine residue;

replacing at least one arginine residue of said polypeptide with a citrulline residue; and

recovering the citrullinated peptide recognized by the serum of patients suffering from rheumatoid arthritis.

14. A process of claim 13, wherein the replacement of arginine with citrulline is made by deimination of said arginine by a peptidylarginine deiminase.

15. A process of claim 13, wherein the replacement of arginine with citrulline is made by incorporation of one or more citrulline residues in place of one or more arginine residues during synthesis of the peptide.

16. A process for preparing an antigenic composition wherein said process comprises:
preparing an artificial antigen by the process of claim 13; and
incorporating said antigen into a composition.

17. A process of claim 16 further comprising labeling said artificial antigen.

18. A process of claim 16 further comprising conjugating said antigen with a carrier molecule.

19. A method for the *in vitro* diagnosis of rheumatoid arthritis comprising the steps of:

preparing an artificial antigen by the process of claim 13;

providing a biological sample for diagnosis of rheumatoid arthritis;

bringing said biological sample into contact with said artificial antigen under conditions allowing the formation of an antigen/antibody complex with the autoantibodies specific for rheumatoid arthritis which may be present in said biological sample; and

detecting, by any appropriate means, the antigen/antibody complex which may be formed.